For the second operation, there would in addition bo about 1 per cent, manganese ore.
2. The lime required is :
For the phosphorus 1*8 Px3'61(wV<' (58) (>•/>() pm- nmt. CaO. Eor the silica, viz. : —
0*45 SiG2 from furnace structure 1'OY ,, i.e., Si in pig' ironX-'M 1-00 „ from the oro Total. 5F52per cent. 8iOflx2-33 (w/r-ll) =5-87
Total . . 12-37 por rout. (1a,O. Of which there will be derived from hoartli 'i--ir> ,t CnOfMjjO
Thus there must bo addtul 7*92 pin- oout. ('a.O. Or, say, 16 per cent, limestone.
3. The amount and composition of the phosphoric, slug can now be ascertained from the foregoing figures.
One obtains from the first operation :
Prom 2'52 per cent. Si0.2X2'9 (vide. 4()A)»- 7*31 hypothetical nilirato whig. „ 1-80
„ T X5'9(,, 38)::l()-()2 calc.iuiu phonphato. Or a total of . . 17*93 por c.ont. sla^.
It may be assumed that of this slag, "1)8 por cant, in scattered about and lost, so that only about 17 por cant, is won.
Beckoned in percentages, one finds the sumo to bo composed of 59*2 percent Calcium phosphate, i.e., 12B por emit. I\»0ft, and 86 per cent. CaO, and 40*8 per cent, silicate slag, containing the following :
40-8xO-34=i:j-8 per cent. SK)^ (wtfr -lOa).
3= 5-3 „ Mn<)(„ 37). 40-8 x 0-04 := 1-7 „ Al,0aiot«.)
The complete composition thus would be approximately : 23 per cent. I\0S, 14 per cent. 8i()tt, 5 par ecint K«()f
5 per cent. MnO, 51 per cent. (GaO + MgO) +2 per cent!
Ala08, etc. The growth of bath would be as follows :—
O'D per cent. 8i xl'OO (vide «K) 0*50 jxu- rout..
•1'8 ,, P XiMH) (,, 70} 3-00
4-0 „ 0 Xl'47 (,, 74) .VKK
Total . . . <nm
Less shrinkage due to 2 per cent. MnxO'32 (vide, 72) (»'(
Yielding net . . . "'KM
«nt.
out.